

Curriculum Vitae

Yulun Wu

University of Ottawa
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Education

- 2020-2024 **PhD in Geography**
University of Ottawa, Ottawa, ON, Canada
Thesis: *Modelling and correcting for the adjacency effect in remote sensing of coastal and inland waters*
Supervisor: Dr. Anders Jensen Knudby
- 2014-2019 **Honours Bachelor of Science in Environmental Science (Co-op)**
University of Ottawa, Ottawa, ON, Canada
Honours Thesis: *The spatial distribution of arsenic and other trace metal contaminants and their acute toxicity to Daphnia pulex in lakes near the Giant Mine in Yellowknife, Canada*
Supervisor: Dr. Jules M. Blais

Research Interests

Coastal remote sensing; atmospheric correction; ocean optics; aerosols; planetary science; radiative transfer; geospatial analysis.

Professional Experience

- 2024-Present Remote Sensing and Field Technician, WSP Canada Inc., Montreal
- 2021-Present Lab Coordinator, Shallow Water Earth Observation Lab, University of Ottawa
- 2022-2023 Assistant Ecologist, Office of the Chief Ecosystem Scientist, Parks Canada
- 2022 Remote Sensing Technician, Liquid Geomatics, Ottawa
- 2021 Field Technician, Fluvial Systems Research Inc., Vancouver
- 2020-2024 Remote Sensing Researcher, Agriculture and Agri-Food Canada, Ottawa
- 2020-2022 Research Assistant, Network on Coastal, Oceans and Lake Optics Remote Sensing (NetCOLOR)
- 2018-2020 Spatial Analyst (Co-op), Ottawa Neighbourhood Study, University of Ottawa
- 2018 Assistant Librarian (Co-op), Ottawa Hospital Research Institute, Ottawa
- 2017 Research Assistant (Co-op), Macroecology Lab, Department of Biology, University of Ottawa

Teaching Experience

- Winter 2025 **Course Instructor**
GEG3105 *Earth Observation*
University of Ottawa
- 2023-2024 **Guest Lecturer**
GEG4104 *Methodological and Theoretical Approaches in Geography and Environmental Studies* and GEG3105 *Earth Observation*
University of Ottawa
- 2021-2023 **Teaching Assistant**
MAT1371 *Descriptive Statistics*, GEG3305 *Geographies of Globalization*, GEG4702 *Le développement des villes*, ENV1101 *Global Environmental Challenges*, GEG3114 *Biogeography*, and BIO2129 *Ecology* (in chronological order)
University of Ottawa

Publications

Peer reviewed

- Wu, Y.**, Knudby, A., Pahlevan, N., Lapen, D., & Zeng, C. (2024). Sensor-generic adjacency-effect correction for remote sensing of coastal and inland waters. *Remote Sensing of Environment*, 315, 114433. <https://doi.org/10.1016/j.rse.2024.114433>
- Richardson, G., Foreman, N., Knudby, A., **Wu, Y.**, & Lin, Y. (2024). Global deep learning model for delineation of optically shallow and optically deep water in Sentinel-2 imagery. *Remote Sensing of Environment*, 311, 114302. <https://doi.org/10.1016/j.rse.2024.114302>
- Richardson, G., Foreman, N., **Wu, Y.**, & Knudby, A. (2024). Global Delineation of Optically Shallow and Optically Deep Water Using Machine Learning. IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, 6010–6013. <https://doi.org/10.1109/IGARSS53475.2024.10641668>
- Wu, Y.**, & Knudby, A. (2023, July). A Tool That Calculates the Sea-Surface Reflectance Factor in Customized Environments and Geometry. The International Geoscience and Remote Sensing Symposium 2023. https://2023.ieeeigarss.org/view_paper.php?PaperNum=3004
- Wu, Y.**, Knudby, A., & Lapen, D. (2023). Topography-adjusted Monte Carlo simulation of the adjacency effect in remote sensing of coastal and inland waters. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 108589. <https://doi.org/10.1016/j.jqsrt.2023.108589>

Non-peer reviewed

- Wu, Y.** (2022). T-Mart Radiative Transfer Code and Documentation. <https://tmart-rtm.github.io>
- Wu, Y.** (2021). Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters [Report in fulfillment of the requirement for fast-tracking into a PhD program]. University of Ottawa.

Wu, Y. (2020, September). Social Distancing: Easy in a Kayak Surrounded by Instruments – Collection of Remote Sensing Reflectance in Rivers. *Geography, Environment and Geomatics Newsletter*. <https://arts.uottawa.ca/geography/geg-env-newsletter>

Wu, Y., Cheney, C., & Blais, J. M. (2019). The spatial distribution of arsenic and other trace metal contaminants and their acute toxicity to *Daphnia pulex* in lakes near the Giant Mine in Yellowknife NWT [Honours Thesis]. University of Ottawa.

Awards & Scholarships

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| 2024 | Association of Professors of the University of Ottawa Award (\$1,500) |
| 2022-2023 | Ontario Graduate Scholarship for International Students (\$15,000) |
| 2021-2025 | PhD Admission Scholarship, University of Ottawa (\$78,500) |
| 2021-2022 | Student Experience Fund, University of Ottawa (\$1,000) |
| 2021 | BMO Financial Group Graduate Bursaries (\$4,000) |
| 2020-2021 | uOttawa International Graduate Bursary, University of Ottawa (\$4,000) |
| 2020-2021 | Suzanne Gratton-Sarrazin Scholarship, University of Ottawa (\$2,050) |
| 2019 | Roger Guindon Scholarship Fund (\$1,000) |
| 2019 | Gilles G. Patry Community Engagement Scholarship (\$1,000) |
| 2018 | J. P. Bickell Foundation Mining Scholarship (\$2,000) |
| 2017-2023 | uOttawa Financial Aid Bursary for International Students (\$3,250) |
| 2017-2019 | Faculty of Science Dean's Honour List & Merit Scholarship, University of Ottawa (\$3,000) |
| 2017-2019 | Science Students' Association International Student Scholarship, University of Ottawa (\$1,000) |
| 2017 | Brian Rust Memorial Scholarship (\$1,600) |

Research Grant

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| 2023-2024 | Separation of optically deep and shallow water. <i>Big Idea Grant, University of Ottawa</i> (\$20,000) |
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Service & Outreach

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| 2024-Present | Manuscript reviewer: Journal of Hydrometeorology, Remote Sensing of Environment |
| 2024-Present | Treasurer, Ottawa Chapter, Canadian Remote Sensing Society |
| 2024 | Hosted workshop: Building your first radiative transfer model through Monte Carlo. Shallow Water Earth Observation Lab, University of Ottawa (January 26). |

2020-2023 Treasurer, Geography Graduate Student Association, University of Ottawa

WHIMS, radiation safety certifications
Ontario G driver's licence

Presentations

- Wu, Y., & Knudby, A.** (2024, June 13). *Adjacency Effect Modelling and Correction for Optical Remote Sensing of Inland and Coastal Waters*. 45th Canadian Symposium on Remote Sensing, Halifax, Nova Scotia, Canada.
- Wu, Y., Knudby, A., Pahlevan, N., Lapen, D., Zeng, C., & Begeman, C.** (2023, November 15). *Adjacency-effect correction in remote sensing of coastal and inland waters for Sentinel-2 MSI and Landsat-8 OLI imagery*. International Ocean Colour Science Meeting 2023, St. Petersburg, Florida, the USA.
- Wu, Y., & Knudby, A.** (2023, July 17). *A Tool That Calculates the Sea-Surface Reflectance Factor in Customized Environments and Geometry*. The International Geoscience and Remote Sensing Symposium 2023, Pasadena, California, the USA.
- Wu, Y., Knudby, A., & Lapen, D.** (2023, May 29). *Adjacency Effect Modelling and Correction for Remote Sensing of Inland and Coastal Waters*. The Canadian Meteorological and Oceanographic Society 57th Congress, St. John's, NL, Canada.
- Wu, Y., & Knudby, A.** (2022, February 28). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. Ocean Sciences Meeting 2022, Online. <https://osm2022.secure-platform.com/a/gallery/rounds/3/details/5093>
- Wu, Y.** (2021, May 7). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. Geography, Environment and Geomatics Graduate Student Conference, University of Ottawa.
- Wu, Y.** (2021, March 17). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. The 3rd National NetCOLOR Meeting, Université Laval.
- Wu, Y.** (2020, September 2). *Retrieval of remote sensing reflectance in the South Nation River, Ottawa*. NetCOLOR Communities-of-Practice Workshop, University of Ottawa.
- Wu, Y.** (2020, February 24). *Satellite derived water quality observations in inland waters*. Canadian Hydrographic Conference, Quebec City, Canada.
- Wu, Y.** (2020, February 11). *Remote sensing-based detection of point source pollution in Canadian waterways*. NetCOLOR Communities-of-Practice Workshop, University of Ottawa.
- Wu, Y.** (2019, November 6). *The use of satellite imagery to monitor inland water quality*. EVS4904 Environmental Science Seminar, University of Ottawa.
- Wu, Y.** (2019, October 9). *Remote sensing of seaweed in the Atlantic Ocean*. EVS4904 Environmental Science Seminar, University of Ottawa.

Wu, Y. (2019, April 8). *Lakes close to an abandoned gold mine continue to show hazardous metal(loid) concentrations for *Daphnia pulex* (water fleas) despite a decade of recovery* [Honours Thesis]. Poster Presentation, University of Ottawa.